series can include at least two electrically isolated individual cells. The assembly can include a channel, such as the channel of electrolyte **86** between the one series of cells and the other series of cells. In accordance with example implementations, the one series can be aligned laterally of the other series, and the individual cells of the one series are aligned lateral to the individual cells of the other series to form a pair of cells, for example. With regard to the pairs of cells, one of the pair of cells can be configured to dissociate guest materials, and the other of the pair of cells can be configured to associate guest materials. The assembly can include conduits extending along the perimeter of each of the series of cells, with the conduits configured to expose the metal organic framework of each of the cells of each of the series. One series of cells can be in fluid communication with one conduit, and the other series of cells can be in fluid communication with another conduit.

In compliance with the statute, embodiments of the invention have been described in language more or less specific as to structural and methodical features. It is to be understood, however, that the entire invention is not limited to the specific features and/or embodiments shown and/or described, since the disclosed embodiments comprise forms of putting the invention into effect. The invention is, therefore, claimed in any of its forms or modifications within the proper scope of the appended claims appropriately interpreted in accordance with the doctrine of equivalents.

The invention claimed is:

1. An electrochemical cell comprising:

at least two individual cells;

one of the two cells comprising metal organic framework having one oxidation state;

another of the two cells comprising metal organic framework having another oxidation state, the one oxidation state being different than the other oxidation state.

2. The electrochemical cell of claim **1** wherein one or the other metal organic frameworks of the one or the other cells is configured to bind with a guest material.

3. The electrochemical cell of claim **1** wherein at least a portion of either one or the other of the metal of the metal organic framework is a transition metal.

4. The electrochemical cell of claim **1** wherein the metal of the metal organic framework is one or more of Ti, Zr, Hf, Rf, V, Nb, Ta, Db, Cr, Mo, W, Sg, Mn, Tc, Re, Bh, Fe, Ru, Os, Hs, Co, Rh, Os, Hs, Co, Rh, Ir, Mt, Ni, Pd, Pt, Ds, Cu, Ag, Au, and Rg.

5. The electrochemical cell of claim **1** wherein at least a portion of either one or the other of the metal organic framework comprises a substantially conductive organic ligand.

6. A method of separating carbon dioxide from a mixture comprising carbon dioxide, the method comprising:

providing a mixture to at least one cell and associating the carbon dioxide of the mixture with a metal organic framework of the one cell; and

altering the oxidation state of the metal organic framework to disassociate at least some of the carbon dioxide from the metal organic framework.

7. The method of claim **6** wherein the mixture comprises flue gas.

8. The method of claim **6** further comprising while providing the mixture to the cell, disassociating carbon dioxide from another cell, the metal organic framework of the one cell having a different oxidation state than the metal organic framework of the other cell.

9. The method of claim **8** further comprising alternatively associating carbon dioxide with the one cell and disassociating carbon dioxide from the other cell to separate carbon dioxide from the mixture.

10. The method of claim **8** wherein the metal organic framework of the one cell comprises (M^{2+}/M^{3+}) and the other cell comprises (M^{3+}/M^{3+}).

11. The method of claim **8** further comprising cycling the mixture between the one and another cell.

12. A method of separating one or more carbon compounds from a mixture comprising carbon compounds, the method comprising:

providing a mixture to at least one cell and associating the carbon compound of the mixture with a metal organic framework of the one cell, the carbon compound comprising carbon dioxide, hydrofluorocarbons, refrigerants, butane, propane, pentane, and/or freon; and

altering the oxidation state of the metal organic framework to disassociate at least some of the carbon compound from the metal organic framework.

13. The method of claim **12** further comprising while providing the mixture to the cell, disassociating carbon compound from another cell, the metal organic framework of the one cell having a different oxidation state than the metal organic framework of the other cell.

14. The method of claim **13** further comprising alternatively associating the carbon compound with the one cell and disassociating the carbon compound from the other cell to separate the carbon compound from the mixture.

15. The method of claim **13** wherein the metal organic framework of the one cell comprises (M^{2+}/M^{3+}) and the other cell comprises (M^{3+}/M^{3+}).

16. The method of claim **13** further comprising cycling the mixture between the one and another cell.

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